6. (Amended) The compound in accordance with claim 1, wherein R^3 is a member selected from the group consisting of alkoxy, acyloxy and hydroxy.

REMARKS

1. The Claims and Claim Amendments

Claims 1-60 are pending in the above-referenced patent application; claims 1-3, 5-8, 24, 25 and 49 are currently under examination to the extent they read on the elected species as set forth in No. 1 of the Office Action (*see*, page 2 of the Office Action mailed June 6, 2001).

With entry of this Amendment, claim 1 has been amended to more clearly recite the claimed invention. More particularly, in order to expedite prosecution of the present case, claim 1 has been amended to recite that "if R^1 is $-N(CH_3)_2$, R^2 is hydrogen, R^3 is acetyloxy and R^4 is methyl, then X is other than =O," and that "if R^1 is $-N(CH_3)_2$, R^2 is hydroxy, R^4 is alkyl and X is =O, then R^3 is other than hydroxy." No new matter has been introduced by the amendments to claim 1. In addition, in order to expedite prosecution, claim 6 has been amended to further limit the compounds claimed in claim 1. No new matter has been introduced by the amendment to claim 6. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

2. The Office Action

In the Office Action, claim 6 has been objected to under 35 U.S.C. § 101 as being a substantial duplicate of claim 1. Claims 1-3, 6-8 and 49 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Neef *et al.* (EP Patent No. 0,129,499). Claims 1-3, 6-8 and 49 have also been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Cook *et al.*, *Life Sciences*, **52(2)**: 155-162, (1993). Claims 1-3, 5-8, 24, 25 and 49 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Scholz *et al.* (U.S. Patent No. 5,244,886). Claims 1-3, 5-8, 24, 25 and 49 also have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Peeters *et al.* (U.S. Patent No. 5,741,787). For the reasons set forth herein, each of these rejections is overcome.

3. ***The Objection to Claim 6 Under 35 U.S.C. § 101***

Claim 6 has been objected to under 35 U.S.C. § 101 as being a substantial duplicate of claim 1.

In order to expedite prosecution, claim 6 has been amended to further limit the compounds recited in claim 1. More particularly, claim 6 has been amended to recite that "R^3 is a member selected from the group consisting of alkoxy, acyloxy and hydroxy." In view of the amendment to claim 6, Applicants respectfully request that this objection be withdrawn.

4. ***The Rejection Under 35 U.S.C. § 102(b) Over Neef, et al.***

Claims 1-3, 6-8 and 49 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Neef *et al.* (EP Patent No. 0 129 499). In support of this rejection, the Office Action states that Neef *et al.* discloses a generic group of 13α-alkyl-gonanes which arguably falls within the scope of the claimed invention (*see*, page 3 of the Office Action mailed June 6, 2001). In addition, the Office Action states that the compounds disclosed by Neef *et al.* have antigestagenic effects and can be used for postcoital fertility control (*see*, page 3 of the Office Action mailed June 6, 2001).

For a rejection of claims under § 102(b) to be properly founded, the Examiner must establish that a single prior art reference discloses each and every element of the claimed invention. *See, e.g., Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987). In *Scripps Clinic & Research Found. v. Genetech, Inc.*, 18 U.S.P.Q.2d 1001 (Fed. Cir. 1991), the Federal Circuit held:

> Invalidity for anticipation requires that all of the elements and limitations of the claim are found with a single prior art reference. . . .There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention.

Id. at 1010 (emphasis added). Anticipation can be found, therefore, only when a cited reference discloses all of the elements, features or limitations of the presently claimed invention.

The Examiner cites Neef as the basis for the § 102(b) anticipation rejection. Applicants respectfully submit that the Neef. reference does ***not*** disclose ***every*** element of the presently claimed invention and, thus, it cannot form the basis for a § 102(b) rejection.

The Neef reference discloses compounds that have (1) a cis-configuration between the methyl group at the 18-position and the hydrogen at the 14-position, and (2) an anti-configuration between the hydrogen at the 8-position and the hydrogen at the 14-position. To those of skill in the art, this cis-anti configuration is known as the "unnatural" configuration. In addition, the Neef compounds are based on 13-alpha-19-nortestosterone.

In contrast to the Neef compounds, the compounds of the present invention have (1) a trans-configuration between the methyl group at the 18-position and the hydrogen at the 14-position, and (2) an anti-configuration between the hydrogen at the 8-position and the hydrogen at the 14-position. To those of skill in the art, this trans-anti configuration is known as the "natural" configuration. Moreover, those of skill in the art, *e.g.*, steroid chemists, recognize that the "natural" and "unnatural" configurations represent two ***different*** steroid structures. The two different steroid structures produce widely divergent physiological responses. In addition, in contrast to the Neef compounds, the compounds of the present invention are based on 19-norprogesterone, ***not*** 13-alpha-19-nortestosterone.

Neef does not teach or suggest compounds having the natural configuration, *i.e.*, the trans-anti configuration, nor does Neef teach or suggest compounds based on 19-norprogesterone. As such, because Neef ***fails*** to teach or suggest all of the elements, features or limitations of the invention recited in claims 1-3, 6-8 and 49, it does ***not*** anticipate the claimed invention. Accordingly, Applicants respectfully request that the rejection under § 102(b) over Neef be withdrawn.

4. The Rejection Under 35 U.S.C. § 102(B) Over Cook et al.

Claims 1-3, 6-8 and 49 have also been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Cook *et al.* (*Life Sciences*, **52(2)**: 155-162, (1993)). In support of this rejection, the Office Action states that Cook *et al.* teach 17α-acetoxy-11β-(4,4-dimethylaminophenyl)-19-norpregna-4,9-dien-2,3-dione (*see*, page 4 of the Office Action

mailed June 6, 2001). The Office Action also states that Cook *et al.* teach a strong antigestagenic effect (*see*, page 4 of the Office Action mailed June 6, 2001).

A perusal of the Cook *et al.* reference reveals that compounds 2, 3, 4 and 6 do ***not*** present § 102(b) anticipation concerns. More particularly, compound 2 of the Cook *et al.* reference does not anticipate the compounds recited in claim 1 because R^3, which corresponds to the X position in the Cook *et al.* compounds) ***cannot*** be hydrogen. Compounds 3, 4 and 6 of the Cook *et al.* reference do ***not*** present § 102(b) anticipation concerns because in the compounds recited in claim 1, C-6 and C-16 are ***not*** substituted. In compounds 3, 4 and 6 of Cook *et al.*, either the C-6 (*i.e.*, compound 6), the C-16 (*i.e.*, compound 3) or both the C-6 and the C-16 (*i.e.*, compound 4) are substituted with a methyl or an ethyl group.

As explained above, in order to expedite prosecution of the present case, Applicants have amended claim 1 to recite that "if R^1 is $-N(CH_3)_2$, R^2 is hydrogen, R^3 is acetyloxy and R^4 is methyl, then X is other than =O" As explained in the specification, for example, this particular compound is used as a lead compound to form the other compounds of interest. As such, claim 1, as amended, is ***not*** anticipated by Cook *et al.* Accordingly, Applicants respectfully request that the rejection under § 102(b) over Cook *et al.* be withdrawn.

5. ***The Rejection Under 35 U.S.C. § 103(a) Over Scholz et al.***

Claims 1-3, 5-8, 24, 25 and 49 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Scholz *et al.* (U.S. Patent No. 5,244,886).

To construct a *prima facie* case of obviousness, the Examiner must meet three requirements. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references) must teach or suggest all of the claim limitations. *See*, MPEP § 2142. Applicants respectfully submit that at least two of the three requirements have not been met by the Scholtz *et al.* reference.

a. Scholz does not provide the motivation to modify the compounds disclosed therein

Scholz does not teach or suggest compounds having the natural trans-anti configuration, *i.e.*, compounds of the present invention. Instead, Scholz discloses compounds having the unnatural syn-anti configuration. As mentioned above, to those of skill in the art (*e.g.*, steroid chemists), the disclosure of compounds having the unnatural syn-anti configuration does not teach or suggest the compounds having the natural trans-anti configuration, *i.e.*, compounds of the present invention. Again, to one of skill in the art, compounds having the unnatural syn-anti configuration are structurally ***different*** from compounds having the natural trans-anti configuration. A perusal of the Scholz *et al.* reference reveals that there is no teaching or suggestion in this reference that would lead one of skill in the art to modify the compounds disclosed therein, *i.e.*, to modify the compounds having the unnatural syn-anti configuration so that they have the natural trans-anti configuration. Absent such a teaching or suggestion, the claimed compounds are non-obvious and, thus, patentable. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) over Scholz *et al.* be withdrawn.

b. Scholz does not provide the required reasonable expectation of success

As discussed above, Scholz teaches a different steroid configuration. A steroid chemist would not expect the unnatural configuration to behave in a manner similar to the natural configuration. Therefore, a steroid chemist, upon examining the Scholz *et al.* reference, would not be lead to believe that Applicants' compounds having the trans-anti natural configuration would behave similarly to the Scholz *et al.* compounds having the cis-syn unnatural configuration. As Scholz does not provide a reasonable expectation of success, a proper *prima facie* case of obviousness has not been made. As such, the claimed compounds are non-obvious and, thus, patentable over Scholz *et al.* Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) over Scholz *et al.* be withdrawn.

6. The Rejection Under 35 U.S.C. § 103(a) Over Peeters et al.

Claims 1-3, 5-8, 24, 25 and 49 also have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Peeters *et al.* (U.S. Patent No. 5,741,787). In support of this rejection, the Office Action states that Peeters discloses a generic group of 11-substituted steroids. In addition, Peeters teaches that the compounds disclosed therein have antiglucocorticoid properties. Although the Office Action acknowledges that the instant claims differ from the reference by reciting specific compounds not exemplified by the prior art, it nonetheless alleges that the claims are obvious (*see*, page 5 of the Office Action). Applicants respectfully ***disagree***.

Peeters differs from Applicants' invention in two ways: (1) the compounds recited in claim 1 are not taught or suggested by Peeters; and (2) the compounds recited in claim 1 possess properties that are lacking in the Peeters' compounds.

Peeters discloses and claims the use of compounds having seven different points of substitution (*i.e.*, R_1, R_2, R_3, R_4, R_5, R_6 and R_7),with ***numerous*** substituents being available for each of the seven different points of substitution (*see*, *e.g.*, column 1, line 54 through column 2, line 43, and claim 2). Based on a very conservative estimation, ***millions*** upon ***millions*** of compounds are encompassed by the generic formula disclosed by Peeters. Applicants respectfully ask the Examiner to consider the present patent application in view of *In re Baird*, 29 U.S.P.Q.2d 1550 (Fed. Cir. 1994). *In re Baird* stands for the proposition that a generic formula does not by itself necessarily render a compound encompassed by that formula obvious. In *In re Baird*, the invention included a generic formula which encompassed more than 100 million different compounds. Although the compound at issue was part of this generic formula, the Federal Circuit found ***no*** suggestion in the reference to select the particular substituents to produce the compound at issue. The same is true in the present case. There is ***no*** teaching or suggestion in the Peeters reference to select the particular substituents from the lists of many, many different substituents to produce the compounds recited in claim 1.

In addition, it is respectfully pointed out that Applicants' compounds possess properties that are lacking in the Peeters' compounds. As such, Peeters does ***not*** provide the

motivation to carry out the claimed invention, *i.e.*, to make the compounds recited in amended claim 1. As explained in the specification, one of the advantages of the compounds of the present invention (*i.e.*, the compounds of Formula I) is that they possess potent antiprogestational activity with minimal antiglucocorticoid activity (*see*, the specification at, for example, page 1, lines 7-20, page 2, lines 28-30, *etc.*). In contrast to the compounds of the present invention, Peeters explicitly states that the compounds disclosed therein are "antiglucocorticoid steroids" (*see*, *e.g.*, column 1, lines 6-8 of Peeters). In fact, the Peeters invention relates to the discovery that antiglucocorticoid steroids possess anxiolytic effects, which make such steroids useful in the treatment of anxiety disorders (*see*, column 1, lines 22-24). As such, if one of skill in the art were interested in making compounds that possess potent antiprogestational activity with minimal antiglucocorticoid activity, the skilled artisan would stay away from the compounds and teachings of Peeters because again such compounds are antiglucocorticoid steroids.

In addition to teaching away from the substantial glucocorticoid property of Applicants' compounds, Peeters does ***not*** teach or suggest another important property of Applicants' compounds—their antiprogestational activity. Peeters does not teach or suggest that the compounds disclosed therein have antiprogestational activity. As such, the Peeters' reference does ***not*** provide a reasonable expectation of success to those of skill in the art because Peeters is silent on the issue of antiprogestational activity.

Applicants respectfully ask the Examiner to consider the present patent application in view of *In re Papesch*, 137 U.S.P.Q. 43 (CCPA 1963). Papesch stands for the proposition that:

> [F]rom the standpoint of patent law, a compound and all of its properties are inseparable...the thing that is patented is not the formula but the compound identified by it.

See, page 391 of *In re Papesch*. In the same way that two compounds with greatly differing structures, but similar properties would not be considered legally obvious, two compounds with similar structures, but greatly differing properties also would not be considered obvious from the standpoint of patent law.

In view of the foregoing, Applicants respectfully submit that: (1) not every element of the claimed compounds is found in Peeters; (2) there is ***no*** teaching or suggestion in the Peeters reference to select the particular substituents to produce the claimed compounds; and (3) the Peeters' reference does ***not*** provide a reasonable expectation of success due to Peeters' teaching away from compounds having minimal antiglucocorticoid activity, and due to Peeters' silence on the issue of antiprogestational activity. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) over Peeters be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,

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WC 9020553 v1

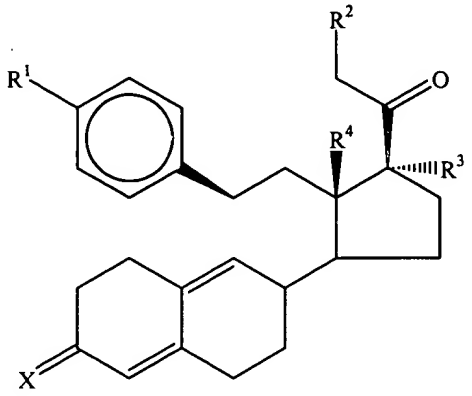
PATENT

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims

Please amend claims 1 and 6 in the following manner:

1. (Amended) A compound having the general formula:



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wherein:

R^1 is a member selected from the group consisting of $-OCH_3$, $-SCH_3$, $-N(CH_3)_2$, $-NHCH_3$, $-NC_4H_8$, $-NC_5H_{10}$, $-NC_4H_8O$, -CHO, $-CH(OH)CH_3$, $-C(O)CH_3$, $-O(CH_2)_2N(CH_3)_2$, $-O(CH_2)_2NC_4H_8$, and $-O(CH_2)_2NC_5H_{10}$;

R^2 is a member selected from the group consisting of hydrogen, halogen, alkyl, acyl, hydroxy, alkoxy, acyloxy, alkylcarbonate, cypionyloxy, S-alkyl, -SCN, S-acyl, and $-OC(O)R^6$, wherein R^6 is a member selected from the group consisting of alkyl, alkoxy ester and alkoxy;

R^3 is a member selected from the group consisting of alkyl, hydroxy, alkoxy and acyloxy;

R^4 is a member selected from the group consisting of hydrogen and alkyl;

[and]

X is a member selected from the group consisting of =O and $=N-OR^5$, wherein R^5 is a member selected from the group consisting of hydrogen and alkyl; and

wherein:

if R^1 is $-N(CH_3)_2$, R^2 is hydrogen, R^3 is acetyloxy and R^4 is methyl, then X is other than =O; and

if R^1 is $-N(CH_3)_2$, R^2 is hydroxy, R^4 is alkyl and X is =O, then R^3 is other than hydroxy.

6. (Amended) The compound in accordance with claim 1, wherein R^3 is a member selected from the group consisting of[alkyl,] alkoxy, acyloxy and hydroxy.

In view of the foregoing, Applicants respectfully submit that: (1) not every element of the claimed compounds is found in Peeters; (2) there is ***no*** teaching or suggestion in the Peeters reference to select the particular substituents to produce the claimed compounds; and (3) the Peeters' reference does ***not*** provide a reasonable expectation of success due to Peeters' teaching away from compounds having minimal antiglucocorticoid activity, and due to Peeters' silence on the issue of antiprogestational activity. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) over Peeters be withdrawn.

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In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

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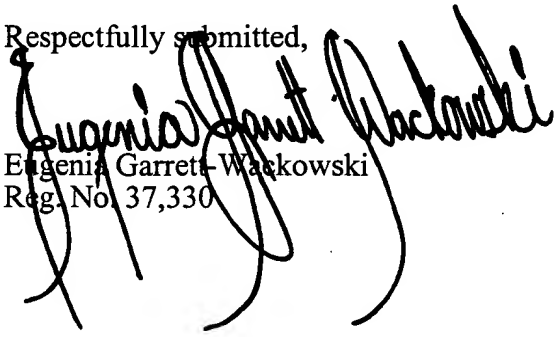
Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims

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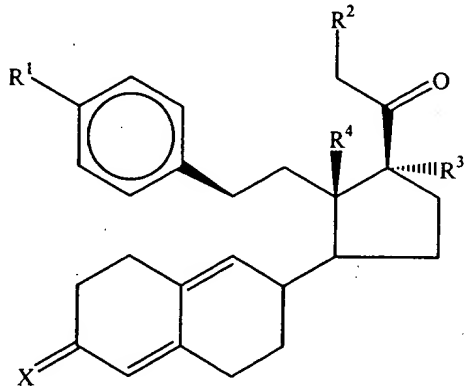
1. (Amended) A compound having the general formula:



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wherein:

R^1 is a member selected from the group consisting of $-OCH_3$, $-SCH_3$, $-N(CH_3)_2$, $-NHCH_3$, $-NC_4H_8$, $-NC_5H_{10}$, $-NC_4H_8O$, -CHO, $-CH(OH)CH_3$, $-C(O)CH_3$, $-O(CH_2)_2N(CH_3)_2$, $-O(CH_2)_2NC_4H_8$, and $-O(CH_2)_2NC_5H_{10}$;

R^2 is a member selected from the group consisting of hydrogen, halogen, alkyl, acyl, hydroxy, alkoxy, acyloxy, alkylcarbonate, cypionyloxy, S-alkyl, -SCN, S-acyl, and $-OC(O)R^6$, wherein R^6 is a member selected from the group consisting of alkyl, alkoxy ester and alkoxy;

R^3 is a member selected from the group consisting of alkyl, hydroxy, alkoxy and acyloxy;

R^4 is a member selected from the group consisting of hydrogen and alkyl;

[and]

X is a member selected from the group consisting of =O and $=N-OR^5$, wherein R^5 is a member selected from the group consisting of hydrogen and alkyl; and

wherein:

if R^1 is $-N(CH_3)_2$, R^2 is hydrogen, R^3 is acetyloxy and R^4 is methyl, then X is other than =O; and

if R^1 is $-N(CH_3)_2$, R^2 is hydroxy, R^4 is alkyl and X is =O, then R^3 is other than hydroxy.

6. (Amended) The compound in accordance with claim 1, wherein R^3 is a member selected from the group consisting of[alkyl,] alkoxy, acyloxy and hydroxy.